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Title:
Experimental Tests of the Islet Dual Oscillator Model

Abstract:
The Dual Oscillator Model (DOM) is the latest in a series of dynamical models of islet function. The model consists of equations describing ion channel excitability, intracellular free Ca^{2+} handling, mitochondrial function and slow feedback mediated by the glycolytic enzyme phosphofructokinase-M. Experimental tests of the DOM included 'stress testing' mouse islet responses to glucose and demonstrating the nature of the interaction between metabolism and $[Ca^{2+}]_i$. Most recently we have been testing how the generation and metabolism of the glycolytic metabolite fructose 2,6 bisphosphate in beta cells affects the DOM. We are also testing whether the DOM successfully predicts the slow dynamics of K_{ATP} conductance changes during bursting.
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(*Who is very sorry he cannot be here to honor his dear friend and close associate)